



# **STIC Search Report**

**EIC 3700**

**STIC Database Tracking Number: 115419**

**TO: Roderick Bradford**  
**Location: cp2 3a11**  
**Art Unit: 3762**  
**Wednesday, March 03, 2004**

**Case Serial Number: 10/034945**

**From: John Sims**  
**Location: EIC 3700**  
**CP2, 2C08**  
**Phone: 308-4836**

**john.sims@uspto.gov**

## **Search Notes**

The best results seem to be in the patent literature, which appears first in this set of search results. I also searched the inventors in NPL and patent databases.



# STIC Search Results Feedback Form

**EIC 3700**

Questions about the scope or the results of the search? Contact *the EIC searcher or contact:*

**John Sims, EIC 3700 Team Leader  
308-4836, CP2-2C08**

## Voluntary Results Feedback Form

➤ I am an examiner in Workgroup:  Example: 3730

➤ Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

*Types of relevant prior art found:*

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature  
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

**Comments:**

**Drop off or send completed forms to STIC/EIC3700 CP2 2C08**



*your inventors' patents trail*

10/3/1 (Item 1 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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01516565

**CONTROL OF EXTERNALLY INDUCED CURRENT IN AN IMPLANTABLE PULSE GENERATOR**  
**REGELUNG EINES EXTERN INDUZIERTEN STROMES IN EINEM IMPLANTIERBAREN**  
**PULSERZEUGER**

**COMMANDE DE COURANT EXTERIEUREMENT INDUIT DANS UN GENERATEUR D'IMPULSIONS**  
**IMPLANTABLE**

PATENT ASSIGNEE:

Medtronic, Inc., (3290922), 710 Medtronic Parkway Northeast, Minneapolis,  
MN 55432, (US), (Applicant designated States: all)

INVENTOR:

**HRDLICKA, Gregory, A.**, 14010 38th Place North, Plymouth, MN 55447, (US)

**GRABINGER**, Scott, 6333 Eagle Lake Drive, Maple Grove, MN 55369, (US)

**STEIN, Marc, T.**, 2462 West Binner Circle, Chandler, AZ 85224, (US)

**MUELLER, David**, 2115 Rosewood Drive, Roseville, MN 55113, (US)

**WESSELINK**, Willem, Begoniastraat 51, NL-6982 CV Doesburg, (NL)

LEGAL REPRESENTATIVE:

Hughes, Andrea Michelle (75891), Frank B. Dehn & Co., European Patent

Attorneys, 179 Queen Victoria Street, London EC4V 4EL, (GB)

PATENT (CC, No, Kind, Date): EP 1370324 A2 031217 (Basic)

WO 2002083236 021024

APPLICATION (CC, No, Date): EP 2002709468 020211; WO 2002US4011 020211

PRIORITY (CC, No, Date): US 277076 P 010319

DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI;  
LU; MC; NL; PT; SE; TR

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: A61N-001/37

NOTE:

No A-document published by EPO

LANGUAGE (Publication,Procedural,Application): English; English; English

10/3/2 (Item 1 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
(c) 2004 WIPO/Univentio. All rts. reserv.

00951025 \*\*Image available\*\*

**CONTROL OF EXTERNALLY INDUCED CURRENT IN AN IMPLANTABLE PULSE GENERATOR**  
**COMMANDE DE COURANT EXTERIEUREMENT INDUIT DANS UN GENERATEUR D'IMPULSIONS**  
**IMPLANTABLE**

Patent Applicant/Assignee:

MEDTRONIC INC, 710 Medtronic Parkway NE, Minneapolis, MN 55432, US, US  
(Residence), US (Nationality)

Inventor(s):

**HRDLICKA Gregory A**, 14010 38th Place North, Plymouth, MN 55447, US,

**GRABINGER** Scott, 6333 Eagle Lake Drive, Maple Grove, MN 55369, US,

**STEIN Marc T**, 2462 West Binner Circle, Chandler, AZ 85224, US,

**MUELLER David**, 2115 Rosewood Drive, Roseville, MN 55113, US,

**WESSELINK** Willem, Begoniastraat 51, NL-6982 CV Doesburg, NL

Legal Representative:

WALDKOETTER Eric R (et al) (agent), Medtronic, Inc. LC340, 710 Medtronic  
Parkway NE, Minneapolis, MN 55432, US,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200283236 A2-A3 20021024 (WO 0283236)

Application: WO 2002US4011 20020211 (PCT/WO US0204011)

Priority Application: US 2001277076 20010319

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU

CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR  
KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE  
SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW  
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English

Filing Language: English

Fulltext Word Count: 6093

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19/3,KWIC/3 (Item 3 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
(c) 2004 European Patent Office. All rts. reserv.

00769656

**VOLTAGE REGULATOR THAT OPERATES IN EITHER PWM OR PFM MODE**  
**SPANNUNGSREGLER DER IM PULSWEITENMODULATION-MODUS ODER IM**  
**PULSFREQUENZMODULATION-MODUS ARBEITET**

**REGULATEUR DE TENSION FONCTIONNANT EN MODE PWM OU PFM**

PATENT ASSIGNEE:

Micrel, Inc., (1927610), 1849 Fortune Drive, San Jose, CA 95131, (US),  
(Proprietor designated states: all)

INVENTOR:

BITTNER, Harry, J., 2286 Creek Bed Court, Santa Clara, CA 95054, (US)

LEGAL REPRESENTATIVE:

Reinhard - Skuhra - Weise & Partner (100731), Postfach 44 01 51, 80750  
Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 783792 A1 970716 (Basic)  
EP 783792 A1 980114  
EP 783792 B1 020327  
WO 9610287 960404

APPLICATION (CC, No, Date): EP 95931611 950905; WO 95US10907 950905

PRIORITY (CC, No, Date): US 313489 940927

DESIGNATED STATES: DE; FR; GB; IT; NL

INTERNATIONAL PATENT CLASS: H02M-007/42; H02M-003/156; H02M-003/158

NOTE:

No A-document published by EPO

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS B	(English)	200213	580
CLAIMS B	(German)	200213	522
CLAIMS B	(French)	200213	694
SPEC B	(English)	200213	5007
Total word count - document A			0
Total word count - document B			6803
Total word count - documents A + B			6803

...CLAIMS at a frequency dependent upon an input voltage into said  
switching regulator and said regulated output voltage.

8. The method of Claim 1 wherein said **signal generator** is  
self-oscillating at a frequency dependent upon current through an  
output **inductor** of said switching regulator reaching a  
predetermined **limit current** through said output **inductor** .

19/3,KWIC/5 (Item 5 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
(c) 2004 European Patent Office. All rts. reserv.

00210559

**Protection apparatus for patient-implantable device.**

**Schutzeinrichtung fur eine in einen Patienten einpflanzbare Vorrichtung.**

**Appareil de protection pour des dispositifs implantables dans des patients.**

PATENT ASSIGNEE:

INTERMEDICS, INC., (578181), 4000 Technology Drive P.O. Box 4000,  
Angleton Texas 77515, (US), (applicant designated states:  
CH;DE;FR;GB;IT;LI;NL)

INVENTOR:

Winstrom, William Leon, 68 Lee Hill Road, Andover New Jersey, (US)

LEGAL REPRESENTATIVE:

Patentanwalte Grunecker, Kinkeldey, Stockmair & Partner (100721),  
Maximilianstrasse 58, D-8000 Munchen 22, (DE)  
PATENT (CC, No, Kind, Date): EP 228539 A1 870715 (Basic)  
EP 228539 B1 900411  
APPLICATION (CC, No, Date): EP 86115444 861107;  
PRIORITY (CC, No, Date): US 799804 851120  
DESIGNATED STATES: CH; DE; FR; GB; IT; LI; NL  
INTERNATIONAL PATENT CLASS: A61N-001/37; A61B-005/00; H02H-009/00;  
ABSTRACT WORD COUNT: 161  
LANGUAGE (Publication,Procedural,Application): English; English; English  
FULLTEXT AVAILABILITY:  
Available Text Language Update Word Count  
CLAIMS B (English) EPABF1 1032  
SPEC B (English) EPABF1 3648  
Total word count - document A 0  
Total word count - document B 4680  
Total word count - documents A + B 4680

...ABSTRACT A1

An electrical circuit is connected in series with a lead (13) of an implantable heart **pacemaker** (10) between the **pacemaker** and the heart (11) to protect the **pacemaker** against high voltages and currents produced by defibrillators (17) and other sources. The electrical circuit has a sensing resistor (24) arranged between two normally conducting field effect transistors (FETs) (22, 23) all in electrical series with the **pacemaker** lead (13). When the voltage drop across the sensing resistor (24) exceeds a predetermined positive or negative amplitude, a transistor becomes conductive and turns off the normal conduction channels of the FETs. An alternate, electrically conductive high-**impedance** path is switched in to **limit** the **current flow** to the **pacemaker** until the magnitude of the voltage across the sensing resistor drops to a safe level. The transistor then becomes non-conductive and the FETs become conductive re-establishing the normal low- **impedance** conduction path and effectively switching the alternate high-impedance path out of the circuit. ...

19/3,KWIC/10 (Item 5 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

(c) 2004 WIPO/Univentio. All rts. reserv.

00520671 \*\*Image available\*\*

**METHOD AND ARRANGEMENT FOR PREVENTING OVERLOAD**

**PROCEDE DE SYSTEME POUR EVITER UNE SURCHARGE**

Patent Applicant/Assignee:

NOKIA TELECOMMUNICATIONS OY,

HAVUKAINEN Matti,

Inventor(s):

HAVUKAINEN Matti,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9952023 A1 19991014

Application: WO 99FI225 19990323 (PCT/WO FI9900225)

Priority Application: FI 98648 19980323

Designated States: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE  
ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT  
LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT  
UA UG US UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ MD  
RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF  
CG CI CM GA GN GW ML MR NE SN TD TG

Publication Language: English  
Fulltext Word Count: 5478  
Fulltext Availability:  
Detailed Description

#### Detailed Description

... an overload. The load is then an overload. The third amplifier A3 in the regulating unit 444 quickly increases the load current  $I$  until the **current** reaches the **limit** value  $I_m$ ... The load voltage  $V_O$  in turn drops to a value  $V_{ol} = I \cdot R_4$  corresponding to the resistance  $R_I$  of the overload. After moment...

...the regulating element, i.e. FET 42, which was discussed above, whereby both current  $I$  and voltage  $V$ , drop substantially to zero. After that, the **pulse generator** 443 operates in cycles, and current pulses  $P_i$  are conducted into the load 43. The regulator is then in a state that corresponds to an overload. The cycle length  $T$  equals the sum of the charge and discharge times of **capacitor**  $C_3$  in the **pulse generator** 443. Resistance  $R_{18}$  is an order of magnitude greater than resistance  $R_{17}$ . Therefore, the charge time of **capacitor**  $C_3$  is an order of magnitude shorter than the discharge time and, correspondingly, the length of a current pulse  $P_i$  is an order of magnitude...

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? t s21/3/all

21/3/1 (Item 1 from file: 347)  
DIALOG(R)File 347:JAPIO  
(c) 2004 JPO & JAPIO. All rts. reserv.

06134951 \*\*Image available\*\*  
CENTER AUTOMATIC CONTROLLER FOR BOWLING

PUB. NO.: 11-076491 [JP 11076491 A]  
PUBLISHED: March 23, 1999 (19990323)  
INVENTOR(s): MOWERS DAVID L  
LAMANTIA SANTO A  
MUELLER DAVID J  
ALLESHOUSE BRUCE N  
BARCZYK VICTOR S  
PIERCE GERALD A  
WYLAND DAVID C  
DEMAR LAWRENCE E  
DUSSAULT PAUL G  
APPLICANT(s): BRUNSWICK BOWLING & BILLIARDS CORP  
APPL. NO.: 10-175337 [JP 98175337]  
FILED: June 09, 1998 (19980609)  
PRIORITY: 182977 [US 182977], US (United States of America), April 18,  
1988 (19880418)

21/3/2 (Item 1 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.

015972998 \*\*Image available\*\*  
WPI Acc No: 2004-130839/200413  
XRAM Acc No: C04-052194  
XRPX Acc No: N04-104323

**Waveform generator for generating neurological stimulation waveform  
with implantable medical device, includes capacitor arrangement coupled  
to electrical reference, first regulator module coupled to first  
electrode, and switching array**

Patent Assignee: MEDTRONIC INC (MEDT )  
Inventor: GOBLISH T P; HEATHERSHAW T D; LEINDERS R; RODRIGUEZ J D; STEIN M;  
TORGERSON N A; HEATHERSHAW T; RODRIQUEZ J D; **STEIN M T**

Number of Countries: 103 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030208244	A1	20031106	US 2002133702	A	20020426	200413 B
WO 200390849	A1	20031106	WO 2003US11985	A	20030417	200413

Priority Applications (No Type Date): US 2002133702 A 20020426

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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US 20030208244	A1		40	A61N-001/18	
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WO 200390849	A1	E		A61N-001/05	
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Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA  
CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN  
IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO  
NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VC VN  
YU ZA ZM ZW

Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB  
GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT SD SE SI SK SL SZ TR TZ UG  
ZM ZW



21/3/3 (Item 2 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.

015863578 \*\*Image available\*\*  
WPI Acc No: 2004-021409/200402  
XRPX Acc No: N04-016443

**Neurological stimulation waveform generation apparatus for use in medical field, has controller which adjusts pulse width, to instruct waveform generator to produce stimulation pulses with specified time delay**

Patent Assignee: MEDTRONIC INC (MEDT )  
Inventor: GOBLISH T P; HEATHERSHAW T D; LEINDERS R; RODRIGUEZ J D; STEIN M;  
TORGERSON N A; HEATHERSHAW T; RODRIQUEZ J D; **STEIN M T**

Number of Countries: 103 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030204224	A1	20031030	US 2002133906	A	20020426	200402 B
WO 200390857	A1	20031106	WO 2003US9103	A	20030325	200402

Priority Applications (No Type Date): US 2002133906 A 20020426

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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US 20030204224	A1		41	A61N-001/18	
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WO 200390857	A1 E			A61N-001/36	
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Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA  
CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN  
IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO  
NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VC VN  
YU ZA ZM ZW

Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB  
GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ  
UG ZM ZW

21/3/4 (Item 3 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.

015863577 \*\*Image available\*\*  
WPI Acc No: 2004-021408/200402  
XRPX Acc No: N04-016442

**Neurological stimulation waveform generation apparatus for use with implantable neuro stimulator, provides adjustable time delay duration during rate period interval, to balance accumulated charge associated with patient's tissue**

Patent Assignee: MEDTRONIC INC (MEDT )  
Inventor: GOBLISH T P; HEATHERSHAW T D; LEINDERS R; RODRIGUEZ J D; STEIN M;  
TORGERSON N A; HEATHERSHAW T; RODRIQUEZ J D; **STEIN M T**

Number of Countries: 103 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030204222	A1	20031030	US 2002133703	A	20020426	200402 B
WO 200390853	A1	20031106	WO 2003US9359	A	20030326	200402

Priority Applications (No Type Date): US 2002133703 A 20020426

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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US 20030204222	A1		40	A61N-001/18	
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WO 200390853 A1 E A61N-001/05

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA  
CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN  
IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO  
NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VC VN  
YU ZA ZM ZW

Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB  
GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ  
UG ZM ZW

21/3/5 (Item 4 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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015863576 \*\*Image available\*\*

WPI Acc No: 2004-021407/200402

XRPX Acc No: N04-016441

**Neurological stimulation waveform generation apparatus for use with  
implantable neuro stimulator, synthesizes stimulation waveform during  
each phase of rate period interval, corresponding to waveform parameters**  
Patent Assignee: MEDTRONIC INC (MEDT )

Inventor: JENSEN S L; RODRIGUEZ J D; STEIN M; TORGERSON N A; RODRIQUEZ J D;  
**STEIN M T**

Number of Countries: 103 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030204221	A1	20031030	US 2002133513	A	20020426	200402 B
WO 200390844	A2	20031106	WO 2003US11984	A	20030417	200402

Priority Applications (No Type Date): US 2002133513 A 20020426

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
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US 20030204221	A1	41	A61N-001/18	
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WO 200390844	A2 E		A61N-000/00	
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Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA  
CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN  
IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO  
NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VC VN  
YU ZA ZM ZW

Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB  
GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ  
UG ZM ZW

21/3/6 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2004 Thomson Derwent. All rts. reserv.

015838494 \*\*Image available\*\*

WPI Acc No: 2003-900698/200382

XRPX Acc No: N03-719077

**Implantable medical device e.g. implantable neuro stimulator  
determines whether capacitive element is malfunctioning, based on charge  
information of capacitive element**

Patent Assignee: MEDTRONIC INC (MEDT )

Inventor: HEATHERSHAW T D; STEIN M; TORGERSON N A; HEATHERSHAW T P; **STEIN  
M T**

Number of Countries: 103 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030204225	A1	20031030	US 2002133925	A	20020426	200382 B
WO 200390856	A2	20031106	WO 2003US12143	A	20030417	200401

Priority Applications (No Type Date): US 2002133925 A 20020426

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
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US 20030204225	A1	41	A61N-001/18	
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WO 200390856	A2 E		A61N-001/36	
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Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW

Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

21/3/7 (Item 6 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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015838493 \*\*Image available\*\*

WPI Acc No: 2003-900697/200382

XRPX Acc No: N03-719076

**Implantable medical device e.g. implantable neuro stimulator, dynamically configures electrode to independently deliver pulse trains associated with therapy programs, to patient**

Patent Assignee: MEDTRONIC INC (MEDT )

Inventor: GOBLISH T P; HEATHERSHAW T D; LEINDERS R; RODRIGUEZ J D; STEIN M;

TORGERSON N A; HEATHERSHAW T P; RODRIQUEZ J D; **STEIN M T**

Number of Countries: 103 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030204223	A1	20031030	US 2002133884	A	20020426	200382 B
WO 200390850	A1	20031106	WO 2003US12243	A	20030417	200401

Priority Applications (No Type Date): US 2002133884 A 20020426

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
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US 20030204223	A1	40	A61N-001/18	
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WO 200390850	A1 E		A61N-001/05	
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Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW

Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW

21/3/8 (Item 7 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2004 Thomson Derwent. All rts. reserv.

015832761 \*\*Image available\*\*

WPI Acc No: 2003-894965/200382

Related WPI Acc No: 1997-512444; 1998-129746; 1998-506496; 2003-247831

XRPX Acc No: N03-714016

**Action potential inducing apparatus for epidural spinal cord stimulation, creates sub-threshold potential area in tissues capable of producing action potential, by applying stimulation pulses to cathode**

Patent Assignee: MEDTRONIC INC (MEDT )

Inventor: BAUDINO M D; **HRDLICKA G** ; KING G W; LEINDERS R

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6505078	B1	20030107	US 96627578	A	19960404	200382 B
			US 96637361	A	19960425	
			US 97814432	A	19970310	
			US 99312470	A	19990517	
			US 2000523072	A	20000310	

Priority Applications (No Type Date): US 2000523072 A 20000310; US 96627578 A 19960404; US 96637361 A 19960425; US 97814432 A 19970310; US 99312470 A 19990517

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6505078	B1	26	A61N-001/36		CIP of application US 96627578
					CIP of application US 96637361
					Div ex application US 97814432
					CIP of application US 99312470
					CIP of patent US 5713922
					Div ex patent US 5925070
					CIP of patent US 6083252

21/3/9 (Item 8 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2004 Thomson Derwent. All rts. reserv.

015626654 \*\*Image available\*\*

WPI Acc No: 2003-688825/200365

XRPX Acc No: N03-550368

**Implantable medical system e.g. pacemaker controls electric current flow of electric leads, if surrounding magnetic field exceeds predetermined value**

Patent Assignee: CHO Y K (CHOY-I); FOERSTER L D (FOER-I); **HRDLICKA G A** (HRDL-I); KALIN R (KALI-I); REINKE J D (REIN-I); ZEIJLEMAKER V A (ZEIJ-I); MEDTRONIC INC (MEDT )

Inventor: CHO Y K; FOERSTER L D; **HRDLICKA G A** ; KALIN R; REINKE J D; ZEIJLEMAKER V A; ZEIJLEMAKER V A

Number of Countries: 028 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030140931	A1	20030731	US 200259589	A	20020129	200365 B
WO 200363956	A2	20030807	WO 2003US2258	A	20030127	200365

Priority Applications (No Type Date): US 200259589 A 20020129

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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US 20030140931	A1	14	A61B-005/05		
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WO 200363956	A2 E		A61N-001/16		
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Designated States (National): CA JP

Designated States (Regional): AT BE BG CH CY CZ DE DK EE ES FI FR GB GR

HU IE IT LU MC NL PT SE SI SK TR

21/3/10 (Item 9 from file: 350)

DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.

015494677      \*\*Image available\*\*  
WPI Acc No: 2003-556824/200352  
Related WPI Acc No: 2003-556823  
XRPX Acc No: N03-442458

**Medical electrical lead for e.g. therapeutic device, has conductor extending through shunting assembly and coupled to tip electrode, and inductor coupled to tip electrode, for limiting current in electrode**  
Patent Assignee: MEDTRONIC INC (MEDT )  
Inventor: CHO Y K; FOERSTER L D; **HRDLICKA G A** ; KALIN R; REINKE J D;  
ZEIJLEMAKER V A

Number of Countries: 026 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030083726	A1	20030501	US 2001999381	A	20011031	200352 B
			US 200259512	A	20020129	
WO 200363946	A2	20030807	WO 2003US1892	A	20030122	200361

Priority Applications (No Type Date): US 200259512 A 20020129; US 2001999381 A 20011031

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20030083726	A1		13	A61N-001/05	CIP of application US 2001999381
WO 200363946	A2	E		A61N-000/00	
Designated States (National): CA JP					
Designated States (Regional): AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR					

**21/3/11 (Item 10 from file: 350)**

DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.

015187298      \*\*Image available\*\*  
WPI Acc No: 2003-247831/200324  
XRPX Acc No: N03-197038

**Loci adjustable tissue excitation apparatus for spinal cord, varies time delay between weighted average times of pulses applied to electrodes, to vary size and location of suprathreshold potential area**

Patent Assignee: MEDTRONIC INC (MEDT )  
Inventor: BAUDINO M D; **HRDLICKA G** ; KING G W; LEINDERS R  
Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030018370	A1	20030123	US 96627578	A	19960404	200324 B
			US 96637361	A	19960425	
			US 97814432	A	19970310	
			US 99312470	A	19990517	
			US 2000523072	A	20000310	
			US 2002247981	A	20020920	

Priority Applications (No Type Date): US 2000523072 A 20000310; US 96627578 A 19960404; US 96637361 A 19960425; US 97814432 A 19970310; US 99312470 A 19990517; US 2002247981 A 20020920

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20030018370	A1		29	A61N-001/34	CIP of application US 96627578 CIP of application US 96637361

Div ex application US 97814432  
CIP of application US 99312470  
Cont of application US 2000523072  
CIP of patent US 5713922  
Div ex patent US 5925070  
CIP of patent US 6083252

21/3/12 (Item 11 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.

015029357 \*\*Image available\*\*  
WPI Acc No: 2003-089874/200308  
Related WPI Acc No: 1997-512443; 2000-292059  
XRPX Acc No: N03-070900

Electrically excitable tissue interaction apparatus has implantable  
main controller connected to corresponding controller, for identifying  
which electrode is to deliver electrical stimulation to tissue

Patent Assignee: MEDTRONIC INC (MEDT )  
Inventor: HRDLICKA G A ; KING G W; SCHALLHORN R S  
Number of Countries: 001 Number of Patents: 001  
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6473653	B1	20021029	US 96627576	A	19960404	200308 B
			US 9824162	A	19980217	
			US 2000517422	A	20000302	

Priority Applications (No Type Date): US 2000517422 A 20000302; US 96627576  
A 19960404; US 9824162 A 19980217

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 6473653	B1	17	A61N-001/05	CIP of application US 96627576 CIP of application US 9824162 CIP of patent US 6038480

21/3/13 (Item 12 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.

014938919 \*\*Image available\*\*  
WPI Acc No: 2002-759628/200282  
XRPX Acc No: N02-598174

Implantable pulse generator system used in medical device, has  
current limiting circuit with impedance elements serially connected  
between capacitive elements and ground, to provide alternating current  
path to ground

Patent Assignee: MEDTRONIC INC (MEDT )  
Inventor: GRABINGER S ; HRDLICKA G A ; MUELLER D; STEIN M T ; WESSELINK  
W ; HRDLICKA G ; STEIN M

Number of Countries: 097 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20020133204	A1	20020919	US 2001277076	P	20010319	200282 B
			US 200134945	A	20011227	
WO 200283236	A2	20021024	WO 2002US4011	A	20020211	200282
EP 1370324	A2	20031217	EP 2002709468	A	20020211	200402
			WO 2002US4011	A	20020211	

Priority Applications (No Type Date): US 2001277076 P 20010319; US  
200134945 A 20011227

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes  
US 20020133204 A1 19 A61N-001/32 Provisional application US 2001277076

WO 200283236 A2 E A61N-001/37

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA  
CH CN CO CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS  
JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL  
PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR  
IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZM ZW

EP 1370324 A2 E A61N-001/37 Based on patent WO 200283236

Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT  
LI LT LU LV MC MK NL PT RO SE SI TR

21/3/14 (Item 13 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2004 Thomson Derwent. All rts. reserv.

014586038 \*\*Image available\*\*

WPI Acc No: 2002-406742/200244

XRPX Acc No: N02-319349

**Medical trial neuro-stimulator sets neuro- implant to correct operation  
prior to implantation .**

Patent Assignee: MEDTRONIC INC (MEDT )

Inventor: **HRDLICKA G A** ; SKIME R

Number of Countries: 002 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 10127810	A1	20020425	DE 1027810	A	20010607	200244 B
US 6687538	B1	20040203	US 2000596220	A	20000619	200413

Priority Applications (No Type Date): US 2000596220 A 20000619

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

DE 10127810 A1 26 A61N-001/36

US 6687538 B1 A61N-001/08

21/3/15 (Item 14 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2004 Thomson Derwent. All rts. reserv.

014540554 \*\*Image available\*\*

WPI Acc No: 2002-361257/200239

XRPX Acc No: N02-282308

**Neurostimulation device for treating epilepsy, controls implantable  
signal generator based on time information provided by timer and based  
on whether patient is awake or asleep**

Patent Assignee: MEDTRONIC INC (MEDT )

Inventor: **STEIN M T**

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20020038137	A1	20020328	US 99303144	A	19990430	200239 B
			US 2001638	A	20011031	

Priority Applications (No Type Date): US 99303144 A 19990430; US 2001638 A 20011031

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes  
US 20020038137 A1 12 A61N-001/32 Div ex application US 99303144

21/3/16 (Item 15 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2004 Thomson Derwent. All rts. reserv.

014300075 \*\*Image available\*\*

WPI Acc No: 2002-120779/200216

Related WPI Acc No: 2001-265126

XRPX Acc No: N02-090532

**Unwanted current limiting method involves opening conductive loop, by generating and maintaining high impedance within loop, when external signal level is greater than threshold level**

Patent Assignee: MEDTRONIC INC. (MEDT )

Inventor: HARTLAUB J T; **STEIN M T**

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6209764	B1	20010403	US 97847642	A	19970430	200216 B
			US 99303002	A	19990430	

Priority Applications (No Type Date): US 97847642 A 19970430; US 99303002 A 19990430

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes  
US 6209764 B1 14 A61N-001/08 Div ex application US 97847642

21/3/17 (Item 16 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2004 Thomson Derwent. All rts. reserv.

013780915 \*\*Image available\*\*

WPI Acc No: 2001-265126/200127

Related WPI Acc No: 2002-120779

XRPX Acc No: N01-189555

**Externally induced current limitation in implanted medical devices, involves initiating manual opening of conductive loop when living organism enters area where external signal level is greater than threshold**

Patent Assignee: MEDTRONIC INC. (MEDT )

Inventor: HARTLAUB J T; **STEIN M T**

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6198972	B1	20010306	US 97847642	A	19970430	200127 B

Priority Applications (No Type Date): US 97847642 A 19970430

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes  
US 6198972 B1 14 A61N-001/08

21/3/18 (Item 17 from file: 350)

DIALOG(R)File 350:Derwent WPIX



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013597548      \*\*Image available\*\*

WPI Acc No: 2001-081755/200110

XRPX Acc No: N01-062297

**Technique for simulating living tissue, recording active points with local control involves using cable with fewer conductors than number of electrodes between remote point and tissue**

Patent Assignee: MEDTRONIC INC (MEDT )

Inventor: **HRDLICKA G A** ; KING G W

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 19928552	A1	20010104	DE 1028552	A	19990622	200110 B

Priority Applications (No Type Date): DE 1028552 A 19990622

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
DE 19928552	A1	15	A61N-001/18	

**21/3/19      (Item 18 from file: 350)**

DIALOG(R)File 350:Derwent WPIX

(c) 2004 Thomson Derwent. All rts. reserv.

013120188      \*\*Image available\*\*

WPI Acc No: 2000-292059/200025

Related WPI Acc No: 1997-512443; 2003-089874

XRPX Acc No: N00-218975

**Living tissue electrical stimulation and recording techniques with local control of active sites using selected stimulation and recording electrodes to reduce number of conductors to a minimum**

Patent Assignee: MEDTRONIC INC (MEDT )

Inventor: **HRDLICKA G A** ; KING G W

Number of Countries: 002 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6038480	A	20000314	US 96627576	A	19960404	200025 B
			US 9824162	A	19980217	
FR 2796562	A1	20010126	FR 999546	A	19990722	200113 N

Priority Applications (No Type Date): US 9824162 A 19980217; US 96627576 A 19960404; FR 999546 A 19990722

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 6038480	A	15	A61N-001/05	CIP of application US 96627576
FR 2796562	A1		A61N-001/05	

**21/3/20      (Item 19 from file: 350)**

DIALOG(R)File 350:Derwent WPIX

(c) 2004 Thomson Derwent. All rts. reserv.

012177862      \*\*Image available\*\*

WPI Acc No: 1998-594773/199850

XRPX Acc No: N98-462768

**Electrically excitable tissue locus altering system - has device for adjusting first and second frequencies and first and second amplitudes so that locus is altered**

Patent Assignee: MEDTRONIC INC (MEDT )

Inventor: HALL D L; RISE M T; STARKEBAUM W; **STEIN M T**

Number of Countries: 020 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9848888	A1	19981105	WO 98US8613	A	19980429	199850 B
US 5948007	A	19990907	US 97847651	A	19970430	199943
EP 1015070	A1	20000705	EP 98919980	A	19980429	200035
			WO 98US8613	A	19980429	
US 6122548	A	20000919	US 97847651	A	19970430	200048
			US 99348896	A	19990707	

Priority Applications (No Type Date): US 97847651 A 19970430; US 99348896 A 19990707

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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WO 9848888	A1	E	58	A61N-001/34	
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Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

US 5948007	A			A61N-001/05	
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EP 1015070	A1	E		A61N-001/34	Based on patent WO 9848888
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Designated States (Regional): CH DE ES FR GB IT LI NL SE

US 6122548	A			A61N-001/05	Cont of application US 97847651
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Cont of patent US 5948007

**21/3/21 (Item 20 from file: 350)**

DIALOG(R)File 350:Derwent WPIX

(c) 2004 Thomson Derwent. All rts. reserv.

011627029 \*\*Image available\*\*

WPI Acc No: 1998-044157/199805

XRPX Acc No: N98-035295

**Cardiac pacing and defibrillating system having capability to steer pacing or defibrillating pulses to target sites - delivers current pulses across electrode pairs, with each component pulse adjusted as to pulse duration and/or phase to steer, or direct resultant composite pulse**

Patent Assignee: MEDTRONIC INC (MEDT )

Inventor: **HRDLICKA G A** ; KING G W; THOMPSON D L

Number of Countries: 025 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 813889	A2	19971229	EP 97304267	A	19970618	199805 B
JP 10052507	A	19980224	JP 97159626	A	19970617	199818
US 5800465	A	19980901	US 9620421	A	19960618	199842
			US 96755797	A	19961030	

Priority Applications (No Type Date): US 96755797 A 19961030; US 9620421 P 19960618

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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EP 813889	A2	E	35	A61N-001/368	
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Designated States (Regional): AL AT BE CH DE DK ES FI FR GB GR IE IT LI LT LU LV MC NL PT RO SE SI

JP 10052507	A		19	A61N-001/368	
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US 5800465	A			A61N-001/36	Provisional application US 9620421
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**21/3/22 (Item 21 from file: 350)**

DIALOG(R)File 350:Derwent WPIX

(c) 2004 Thomson Derwent. All rts. reserv.

010600512      \*\*Image available\*\*

WPI Acc No: 1996-097465/199610

XRPX Acc No: N96-081371

**Hand-held patient programmer for implanted tissue stimulator - uses RF transmitter and receiver to transmit programming signals to implanted pulse generator and monitor programming and pulse generator status**

Patent Assignee: MEDTRONIC INC (MEDT )

Inventor: **HRDLICKA G A** ; KALLMYER T A; MEYERSON C M; STANTON D J

Number of Countries: 064    Number of Patents: 008

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9601665	A1	19960125	WO 95US8243	A	19950628	199610 B
AU 9529147	A	19960209	AU 9529147	A	19950628	199619
AU 677526	B	19970424	AU 9529147	A	19950628	199725
EP 939661	A1	19990908	EP 95924761	A	19950628	199941
			WO 95US8243	A	19950628	
US 6249703	B1	20010619	US 94272728	A	19940708	200137
EP 1134003	A2	20010919	EP 95924761	A	19950628	200155
			EP 2001113418	A	19950628	
EP 939661	B1	20020828	EP 95924761	A	19950628	200264
			WO 95US8243	A	19950628	
			EP 2001113418	A	19950628	
DE 69527996	E	20021002	DE 627996	A	19950628	200273
			EP 95924761	A	19950628	
			WO 95US8243	A	19950628	

Priority Applications (No Type Date): US 94272728 A 19940708

Patent Details:

Patent No    Kind    Lan    Pg    Main IPC    Filing Notes

WO 9601665    A1 E    32    A61N-001/372

Designated States (National): AM AT AU BB BG BR BY CA CH CN CZ DE DK EE  
ES FI GB GE HU IS JP KE KG KP KR KZ LK LR LT LU LV MD MG MN MW MX NO NZ  
PL PT RO RU SD SE SG SI SK TJ TM TT UA UG US UZ VN

Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT KE LU MC  
MW NL OA PT SD SE SZ UG

AU 9529147    A    A61N-001/372    Based on patent WO 9601665

AU 677526    B    A61N-001/372    Previous Publ. patent AU 9529147  
Based on patent WO 9601665

EP 939661    A1 E    A61N-001/372    Based on patent WO 9601665

Designated States (Regional): DE FR NL

US 6249703    B1    H04B-007/00

EP 1134003    A2 E    A61N-001/372    Div ex application EP 95924761  
Div ex patent EP 939661

Designated States (Regional): DE FR NL

EP 939661    B1 E    A61N-001/372    Related to application EP 2001113418  
Related to patent EP 1134003  
Based on patent WO 9601665

Designated States (Regional): DE FR NL

DE 69527996    E    A61N-001/372    Based on patent EP 939661  
Based on patent WO 9601665

21/3/23      (Item 22 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2004 Thomson Derwent. All rts. reserv.

010400641      \*\*Image available\*\*

WPI Acc No: 1995-301954/199539

XRPX Acc No: N95-229261

**Electrical tissue stimulator with parameter limit control - has first**

memory storing stimulation pulse parameter limit value and second  
memory storing programmed parameter value of stimulation pulse  
Patent Assignee: MEDTRONIC INC (MEDT )  
Inventor: HRDLICKA G A ; THOMPSON D L  
Number of Countries: 065 Number of Patents: 008  
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5443486	A	19950822	US 94312340	A	19940926	199539 B
WO 9609852	A1	19960404	WO 95US10718	A	19950823	199620
AU 9534132	A	19960419	AU 9534132	A	19950823	199630
EP 781153	A1	19970702	EP 95930923	A	19950823	199731
			WO 95US10718	A	19950823	
JP 9511431	W	19971118	WO 95US10718	A	19950823	199805
			JP 96511751	A	19950823	
CA 2199958	C	20010724	CA 2199958	A	19950823	200147
			WO 95US10718	A	19950823	
EP 781153	B1	20030212	EP 95930923	A	19950823	200313
			WO 95US10718	A	19950823	
DE 69529616	E	20030320	DE 629616	A	19950823	200327
			EP 95930923	A	19950823	
			WO 95US10718	A	19950823	

Priority Applications (No Type Date): US 94312340 A 19940926

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

US 5443486 A 15 A61N-001/32

WO 9609852 A1 E 34 A61N-001/36

Designated States (National): AM AT AU BB BG BR BY CA CH CN CZ DE DK EE  
ES FI GB GE HU IS JP KE KG KP KR KZ LK LR LT LU LV MD MG MN MW MX NO NZ  
PL PT RO RU SD SE SG SI SK TJ TM TT UA UG US UZ VN

Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT KE LU MC  
MW NL OA PT SD SE SZ UG

AU 9534132 A A61N-001/36 Based on patent WO 9609852

EP 781153 A1 E 15 A61N-001/36 Based on patent WO 9609852

Designated States (Regional): CH DE FR LI NL SE

JP 9511431 W 36 A61N-001/34 Based on patent WO 9609852

CA 2199958 C E A61N-001/36 Based on patent WO 9609852

EP 781153 B1 E A61N-001/36 Based on patent WO 9609852

Designated States (Regional): CH DE FR LI NL SE

DE 69529616 E A61N-001/36 Based on patent EP 781153

Based on patent WO 9609852

21/3/24 (Item 23 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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008228022 \*\*Image available\*\*

WPI Acc No: 1990-115023/199015

XRPX Acc No: N90-089074

Electrosurgical generator e.g. for driving forceps and scalpel - with  
bipolar electrodes on scalpel blade energised by RF power source to give  
cut or coagulate modes

Patent Assignee: EVEREST MED CORP (EVER-N)

Inventor: GRABINGER S R ; STASZ P

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 4903696	A	19900227	US 88254203	A	19881006	199015 B

Priority Applications (No Type Date): US 88254203 A 19881006

21/3/25 (Item 24 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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003792425

WPI Acc No: 1983-788659/198341

XRPX Acc No: N83-182569

**External or implantable pacemaker - has fast recharge output circuit  
with reference and output capacitors coupled to active electrode**

Patent Assignee: MEDTRONIC INC (MEDT )

Inventor: **STEIN M T**

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 4406286	A	19830927				198341 B

Priority Applications (No Type Date): US 81252538 A 19810409

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 4406286	A	10		

21/3/26 (Item 25 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.

003709477

WPI Acc No: 1983-705659/198327

XRPX Acc No: N83-118834

**Sample and hold circuit for interfacing circuitry - provides output  
analog voltage representative of peak magnitude of sampled input signal**

Patent Assignee: MOTOROLA INC (MOTI )

Inventor: **STEIN M T**

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 4389579	A	19830621				198327 B

Priority Applications (No Type Date): US 81238729 A 19810227; US 7911733 A  
19790213

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 4389579	A	6		

21/3/27 (Item 26 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.

003346387

WPI Acc No: 1982-K4408E/198231

**Body stimulator having selectable stimulation energy levels - uses analog  
and digital circuitry to provide stimulation signals having amplitude,  
duration and frequency dependent on output signals**

Patent Assignee: MEDTRONIC INC (MEDT )

Inventor: LEE Y S; MCDONALD R S; **STEIN M T** ; THOMPSON D L

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 4340062	A	19820720				198231 B

Priority Applications (No Type Date): US 80182597 A 19800829; US 78957827 A 19781106

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 4340062	A	8		

**21/3/28 (Item 27 from file: 350)**

DIALOG(R)File 350:Derwent WPIX

(c) 2004 Thomson Derwent. All rts. reserv.

003009511

WPI Acc No: 1981-A9518D/198105

**Pulse generator producing fixed width pulses - prevents pulse crowding when used at high frequencies for e.g. D-A conversion**

Patent Assignee: MOTOROLA INC (MOTI )

Inventor: **STEIN M T**

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 4245167	A	19810113				198105 B

Priority Applications (No Type Date): US 78967769 A 19781208

**21/3/29 (Item 28 from file: 350)**

DIALOG(R)File 350:Derwent WPIX

(c) 2004 Thomson Derwent. All rts. reserv.

002406524

WPI Acc No: 1980-M2999C/198051

**High impedance output current source - produces output current independent of voltage across load and may be incorporated in integrated circuit**

Patent Assignee: MOTOROLA INC (MOTI )

Inventor: **STEIN M T**

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 4237414	A	19801201				198051 B

Priority Applications (No Type Date): US 78967823 A 19781208

**21/3/30 (Item 29 from file: 350)**

DIALOG(R)File 350:Derwent WPIX

(c) 2004 Thomson Derwent. All rts. reserv.

002378687

WPI Acc No: 1980-J5154C/198039

**Frequency to voltage converter - has peak detector receiving output signal from variable peak magnitude signal generator**

Patent Assignee: MOTOROLA INC (MOTI )

Inventor: **STEIN M T**

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
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US 4222095      A      19800909

198039      B

Priority Applications (No Type Date): US 78967828 A 19781208

**21/3/31      (Item 30 from file: 350)**  
DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.

002374024

WPI Acc No: 1980-J0490C/198037

**Unity gain amplifier current source for e.g. capacitive load - has differential amplifier and includes internal feedback**

Patent Assignee: MOTOROLA INC (MOTI )

Inventor: **STEIN M T**

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 4219782	A	19800826				198037      B

Priority Applications (No Type Date): US 78967824 A 19781208

**21/3/32      (Item 31 from file: 350)**  
DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.

002339581

WPI Acc No: 1980-E6028C/198021

**Heart pacemaker demand measuring amplifier - has blocking stage for all signals from reference level signal generator , effective for time period during and after stimulating signal**

Patent Assignee: MEDTRONIC INC (MEDT )

Inventor: **STEIN M T**

Number of Countries: 007 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 2944631	A	19800514				198021      B
EP 11933	A	19800611				198024
FR 2440197	A	19800704				198033
CA 1145407	A	19830426				198320
EP 11933	B	19840321				198413

Priority Applications (No Type Date): US 78957824 A 19781106

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
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EP 11933	A	E		Designated States (Regional): GB IT NL SE
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EP 11933	B	E		Designated States (Regional): GB IT NL SE
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**21/3/33      (Item 32 from file: 350)**  
DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.

002339576

WPI Acc No: 1980-E6023C/198021

**Heart pacemaker with variable sensitivity - has sensitivity adjuster for detector responsive to reference and absolute value levels respectively**

Patent Assignee: MEDTRONIC INC (MEDT )  
Inventor: **STEIN M T**  
Number of Countries: 008 Number of Patents: 005  
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
DE 2944594	A	19800514				198021 B
EP 11932	A	19800611				198024
FR 2440199	A	19800704				198033
US 4266551	A	19810512				198122
CA 1145406	A	19830426				198320

Priority Applications (No Type Date): US 78957829 A 19781106; US 78957825 A 19781106

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
EP 11932	A	E		

Designated States (Regional): GB IT NL SE

21/3/34 (Item 1 from file: 371)  
000986274 \*\*Image available\*\*  
**Title: TECHNIQUES DE STIMULATION D'UN TISSU VIVANT ET D'ENREGISTREMENT AVEC COMMANDE LOCALE DE SITES ACTIFS**

Patent Applicant/Assignee: MEDTRONIC INC  
Applicant Address: MEDTRONIC INC - Deposant - 7000 CENTRAL AVENUE NORTH  
EAST MINNEAPOLIS MINNESOTA 55432 USA (US)  
Inventor(s): KING GARY W - 1319 HILLCREST DRIVE NE FRODLEY MINNESOTA  
55432 USA (US); **HRDLICKA GREGORY A** - 14010 38 TH PLACE NORTH  
PLYMOUTH MINNESOTA 55447 USA (US)  
Legal Representative: CABINET LAVOIX  
Document Type: Patent / Brevet  
Patent and Priority Information (Country, Number, Date):  
Patent: FR 2796562 - 20010126  
Application: FR 999546 - 19990722  
Priority Application: FR 999546 - 19990722

Legal Status (Type, Action Date, BOPI No, Description):  
Publication 20010126 0104 Date published  
Claim Mod Modified claim  
?



27/3,KWIC/1 (Item 1 from file: 2)  
DIALOG(R)File 2:INSPEC  
(c) 2004 Institution of Electrical Engineers. All rts. reserv.

02321521 INSPEC Abstract Number: A84090335, B84050369

**Title: Forced harmonic motion of a galvanometer**

Author(s): Duncan, A.J.

Author Affiliation: Dept. of Phys., Univ. of Stirling, Stirling, UK

Journal: Physics Education vol.19, no.3 p.129-30

Publication Date: May 1984 Country of Publication: UK

CODEN: PHEDA7 ISSN: 0031-9120

U.S. Copyright Clearance Center Code: 0031-9120/84/030129+02\$02.25

Language: English

Subfile: A B

...Abstract: Omega at a distance of 96 cm from a traditional lamp and scale assembly. The galvanometer is driven by a Philip Harris S-range power **signal generator** whose output can be tuned over the frequency range from 0.7 Hz to 100 kHz and which is connected in series with a Telequipment ...

... the amplitude and phase of the driving current to be monitored and at the same time the 1 M Omega input resistance of the oscilloscope **limits** the **current** through the galvanometer. Variable damping is achieved by changing the resistance  $R/\text{sub } 1/$  of the resistance box in the range 500-10000 Omega . The...

...Identifiers: S-range power **signal generator** ;

27/3,KWIC/2 (Item 2 from file: 2)  
DIALOG(R)File 2:INSPEC  
(c) 2004 Institution of Electrical Engineers. All rts. reserv.

02162650 INSPEC Abstract Number: B84003065

**Title: A high-voltage test generator for insulation testing**

Author(s): Ellison, D.H.; Exon, J.L.T.; Bryan, A.B.

Author Affiliation: Sci. Services Dept., CEEGB, Harrogate, UK

Journal: Journal of Physics E (Scientific Instruments) vol.16, no.11  
p.1046-51

Publication Date: Nov. 1983 Country of Publication: UK

CODEN: JPSIAE ISSN: 0022-3735

Language: English

Subfile: B

...Abstract: testing rotating electrical plant with voltages up to 31 kV (peak) (22 kV RMS) over a frequency range DC to 1 kHz subject to the **current limit** of 100 mA (peak). The design, which is based on a high-voltage class A/B amplifier in a totem-pole configuration with nonlinear control...

...Identifiers: **signal generator** ;

27/3,KWIC/3 (Item 1 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
(c) 2004 BIOSIS. All rts. reserv.

0014502152 BIOSIS NO.: 200300470871

**Device for pre-operative demonstration of implantable hearing systems**

AUTHOR: Waldmann Bernd (Reprint); Leysieffer Hans

AUTHOR ADDRESS: Basel, Switzerland\*\*Switzerland

JOURNAL: Official Gazette of the United States Patent and Trademark Office  
Patents 1274 (3): Sep. 16, 2003 2003  
MEDIUM: e-file  
PATENT NUMBER: US 6620093 PATENT DATE GRANTED: September 16, 2003 20030916  
PATENT CLASSIFICATION: 600-25 PATENT ASSIGNEE: Cochlear **Limited**, Lane  
Cove, Australia PATENT COUNTRY: USA  
ISSN: 0098-1133 \_(ISSN print)  
DOCUMENT TYPE: Patent  
RECORD TYPE: Abstract  
LANGUAGE: English

**Device for pre-operative demonstration of implantable hearing systems**  
PATENT ASSIGNEE: Cochlear **Limited**, Lane Cove, Australia

ABSTRACT: In order to substantially realistically pre-operatively  
demonstrate to patients having an impaired hearing the effect and sound  
impression of an least partially **implantable** hearing system including a  
first electronic audio signal processing unit, a demonstration device is  
provided which comprises an electromechanical transducer adapted for  
being non-invasively...

...of the tympanic membrane and thus to the end point of the manubrium  
mallei for producing mechanical vibrations of the tympanic membrane, an  
electronic audio **signal generator** unit, and a second electronic audio  
signal processing unit connected between the audio **signal generator**  
unit and the electromechanical transducer for driving the  
electromechanical transducer, wherein the second audio signal processing  
unit corresponds to or simulates the first electronic audio signal  
processing unit. A further aspect of the invention is a process for  
preoperatively demonstrating the effect and sound impression of an at  
least partially **implantable** hearing system intended to be **implanted**.

DESCRIPTORS:

METHODS & EQUIPMENT: electronic audio **signal generator** unit...

... **implantable** hearing system...

... **prosthetic**

27/3,KWIC/4 (Item 2 from file: 5)  
DIALOG(R)File 5: Biosis Previews(R)  
(c) 2004 BIOSIS. All rts. reserv.

0014079065 BIOSIS NO.: 200300037784

**Magnetic resonance imaging and deep brain stimulation.**

AUTHOR: Uitti Ryan J; Tsuboi Yoshio; Pooley Robert A; Putzke John D; Turk  
Margaret F; Wszolek Zbigniew K; Witte Robert J; Wharen Robert E (Reprint)

AUTHOR ADDRESS: Department of Neurosurgery, Mayo Clinic Jacksonville, 4500  
San Pablo Road, Jacksonville, FL, 32224, USA\*\*USA

AUTHOR E-MAIL ADDRESS: Wharen.Robert@mayo.edu

JOURNAL: Neurosurgery (Hagerstown) 51 (6): p1423-1431 December 2002 2002

MEDIUM: print

ISSN: 0148-396X \_(ISSN print)

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

...ABSTRACT: is associated with deep brain stimulation (DBS) lead  
displacement or program interference. METHODS: In vitro and in vivo  
studies were performed with the Itrel II **implantable pulse generator**

(IPG) (Model 7424; Medtronic, Minneapolis, MN), Medtronic 3387 and 3389 leads, and a 1.5-T GE Horizon LX scanner (General Electric, Milwaukee, WI). In...

...each of five patients undergoing staged, bilateral, DBS electrode placement in the thalamic or subthalamic nucleus. The data sets were acquired shortly after the initial **implantation** and during stereotactic planning for the second **implantation** (1-8 mo between acquisitions). An additional thalamotomy-treated patient was included as a control patient. Volumetric data were analyzed in a blinded manner, using...

...change after MRI. In vitro, the DBS leads demonstrated no deflection when introduced into the magnetic field. Similarly, no changes in IPG battery strength, lead **impedance**, or program settings were observed. CONCLUSION: MRI was not associated with significant DBS electrode movement or changes in clinical responses. Other IPG models and components and MRI scanners should be evaluated, to develop specific guidelines for MRI among individuals with **implanted** DBS systems.

27/3,KWIC/5 (Item 3 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
(c) 2004 BIOSIS. All rts. reserv.

0014056041 BIOSIS NO.: 200300014760

**Implantable device and method for long-term detection and monitoring of congestive heart failure**

AUTHOR: Erlebacher Jay (Reprint)

AUTHOR ADDRESS: 55 Woodland Park Dr., Tenaflly, NJ, 07670, USA\*\*USA

JOURNAL: Official Gazette of the United States Patent and Trademark Office  
Patents 1263 (5): Oct. 29, 2002 2002

MEDIUM: e-file

PATENT NUMBER: US 6473640 PATENT DATE GRANTED: October 29, 2002 20021029

PATENT CLASSIFICATION: 600-547 PATENT COUNTRY: USA

ISSN: 0098-1133 (ISSN print)

DOCUMENT TYPE: Patent

RECORD TYPE: Abstract

LANGUAGE: English

**Implantable device and method for long-term detection and monitoring of congestive heart failure**

ABSTRACT: The **implantable** device for long term monitoring of congestive heart failure employs a **signal generator**, such as within a pacemaker, to generate an electrical signal which is monitored to obtain a single or dual frequency measurement that can independently measure systemic venous and pulmonary (lung) **impedance**. The device is able to detect changes in resistance to a flow of current in the systemic venous system and changes in **impedance** to a flow of current through a lung to thereby indicate separate detection of systemic venous and pulmonary congestion.

DESCRIPTORS:

...METHODS & EQUIPMENT: congestive heart failure long-term  
detection/monitoring **implantable** device...

27/3,KWIC/6 (Item 4 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
(c) 2004 BIOSIS. All rts. reserv.

0013371731 BIOSIS NO.: 200100543570

**Method and apparatus for accoustically coupling implantable medical**

**device telemetry data to a telephonic connection**

AUTHOR: Soykan Orhan; Combs William J (Reprint); Shelton Michael B  
AUTHOR ADDRESS: Eden Prairie, MN, USA\*\*USA  
JOURNAL: Official Gazette of the United States Patent and Trademark Office  
Patents 1246 (4): May 22, 2001 2001  
MEDIUM: e-file  
PATENT NUMBER: US 6236889 PATENT DATE GRANTED: May 22, 2001 20010522  
PATENT CLASSIFICATION: 607-30 PATENT ASSIGNEE: Medtronic, Inc.  
PATENT COUNTRY: USA  
ISSN: 0098-1133  
DOCUMENT TYPE: Patent  
RECORD TYPE: Abstract  
LANGUAGE: English

**Method and apparatus for accoustically coupling implantable medical device telemetry data to a telephonic connection**

ABSTRACT: An apparatus and method for communicating acoustic telemetry data produced by an **implantable** medical device over a communication channel includes a **signal generator**, a modulator, and an acoustic transmitter each provided in the **implantable** medical device. The modulator modulates a carrier signal with an information signal representative of information acquired or produced by the **implantable** medical device so as to produce a modulated information signal. The modulated information signal may have a frequency content that is readily accommodated by a...

...an embodiment in which the communication channel constitutes a public exchange communication channel, the acoustic information signal preferably has a frequency content that is band **limited** by an audio bandwidth of the public exchange communication channel. A number of different modulation techniques may be employed, including phase modulation, amplitude modulation or frequency modulation. **Implantable** medical devices which may incorporate telemetry circuitry of the present invention include a pacemaker, a pacemaker/cardioverter/defibrillator (PCD), an oxygen sensing device, an **implantable** hemodynamic monitor, a muscle stimulator device or a nerve stimulator device.

DESCRIPTORS:

...METHODS & EQUIPMENT: **implantable** medical device...

...method for coupling **implantable** medical device telemetry data to a telephone connection

27/3,KWIC/7 (Item 5 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
(c) 2004 BIOSIS. All rts. reserv.

0013285271 BIOSIS NO.: 200100457110

**Method and apparatus for synchronized treatment of obstructive sleep apnea**

AUTHOR: Ottenhoff Frans A M (Reprint); Michels Koen J  
AUTHOR ADDRESS: Maastricht, Netherlands\*\*Netherlands  
JOURNAL: Official Gazette of the United States Patent and Trademark Office  
Patents 1248 (5): July 31, 2001 2001  
MEDIUM: e-file  
PATENT NUMBER: US 6269269 PATENT DATE GRANTED: July 31, 2001 20010731  
PATENT CLASSIFICATION: 607-42 PATENT ASSIGNEE: Medtronic Inc.  
PATENT COUNTRY: USA  
ISSN: 0098-1133  
DOCUMENT TYPE: Patent  
RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: A method and apparatus for synchronized treatment of obstructive sleep apnea. In one embodiment such stimulation is provided by an **implantable pulse generator**, the **implantable pulse generator** having a stimulation stage to output stimulation pulses to a body structure, a sensing stage to sense the respiratory effort of a patient, and a...

...electrodes disposed such that the diaphragm is positioned between, and the high frequency current is injected from one electrode to the other and the corresponding **impedance** is measured, the corresponding **impedance** thus being a function of the diaphragm position, itself indicating the respiratory effort of the patient. In such a manner the present invention permits the...

27/3,KWIC/8 (Item 6 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
(c) 2004 BIOSIS. All rts. reserv.

0013050952 BIOSIS NO.: 200100222791

**Implantable stimulator**

AUTHOR: Lang Volker (Reprint); Bolz Armin

AUTHOR ADDRESS: Herzogenaurach, Germany\*\*Germany

JOURNAL: Official Gazette of the United States Patent and Trademark Office  
Patents 1238 (1): Sep. 5, 2000 2000

MEDIUM: e-file

PATENT NUMBER: US 6115633 PATENT DATE GRANTED: September 05, 2000 20000905

PATENT CLASSIFICATION: 607-17 PATENT ASSIGNEE: BIOTRONIK Mess-und  
Therapiegeraete GmbH and Co. Ingenieurbuero Berlin, Berlin, Germany

PATENT COUNTRY: USA

ISSN: 0098-1133

DOCUMENT TYPE: Patent

RECORD TYPE: Abstract

LANGUAGE: English

**Implantable stimulator**

ABSTRACT: An **implantable** stimulator for treating arrhythmic function disturbances of a heart, comprising; a stimulation electrode for transmitting stimulation pulses to the heart, a pulse generator that is ...

...the cardiac pumping performance, the hemodynamic sensor including; two measuring electrodes located in or in electrical contact with a blood vessel, for measuring the blood **impedance** dependent on the blood throughput, a **signal generator** that generates an AC voltage for generating a test signal for **impedance** measurement, an electrical measuring device connected to the two measuring electrodes for determining the blood throughput as a function of the measured electrical signal; and...

DESCRIPTORS:

METHODS & EQUIPMENT: **implantable** stimulator...

27/3,KWIC/9 (Item 7 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
(c) 2004 BIOSIS. All rts. reserv.

0013017902 BIOSIS NO.: 200100189741

**Medical device**

AUTHOR: Pitts Crick Jonathan (Reprint); Van Oort Geeske  
AUTHOR ADDRESS: Bristol, UK\*\*UK  
JOURNAL: Official Gazette of the United States Patent and Trademark Office  
Patents 1237 (3): Aug. 15, 2000 2000  
MEDIUM: e-file  
PATENT NUMBER: US 6104949 PATENT DATE GRANTED: August 15, 2000 20000815  
PATENT CLASSIFICATION: 600-547 PATENT ASSIGNEE: Vitatron Medical, B.V.,  
Dieren, Netherlands PATENT COUNTRY: USA  
ISSN: 0098-1133  
DOCUMENT TYPE: Patent  
RECORD TYPE: Abstract  
LANGUAGE: English

ABSTRACT: A device and method useful in the diagnosis and treatment of congestive heart failure. Specifically the present invention senses the trans-thoracic **impedance** as well as patient posture. By correlating changes in posture with trans-thoracic **impedance** changes, the present invention is able to diagnose and assess the degree of congestive heart failure. The present invention is described in the context of an **implantable pulse generator** system, but it may also be practiced in conjunction with various types of **implantable** devices.

27/3,KWIC/10 (Item 8 from file: 5)  
DIALOG(R)File 5: Biosis Previews(R)  
(c) 2004 BIOSIS. All rts. reserv.

0012778706 BIOSIS NO.: 200000497019  
**Sacral nerve stimulation as an effective treatment of refractory pelvic floor dysfunction**  
AUTHOR: Tamaddon Kirk (Reprint); Bellman Gary (Reprint); Aboseif Sherif (Reprint)  
AUTHOR ADDRESS: Los Angeles, CA, USA\*\*USA  
JOURNAL: Journal of Endourology 14 (Supplement 1): pA76 September, 2000 2000  
MEDIUM: print  
CONFERENCE/MEETING: 18th World Congress on Endourology and SWL 16th Basic Research Symposium Sao Paulo, Brazil September 14-17, 2000; 20000914  
ISSN: 0892-7790  
DOCUMENT TYPE: Meeting; Meeting Abstract; Meeting Poster  
RECORD TYPE: Citation  
LANGUAGE: English

**DESCRIPTORS:**

METHODS & EQUIPMENT: Medronic **implantable pulse generator** sacral nerve **implant** ----

... **limitation** , therapeutic method...  
... **limitation** , therapeutic method

27/3,KWIC/11 (Item 9 from file: 5)  
DIALOG(R)File 5: Biosis Previews(R)  
(c) 2004 BIOSIS. All rts. reserv.

0012678539 BIOSIS NO.: 200000396852  
**Methods and apparatus for electrical microcurrent stimulation therapy**  
AUTHOR: Jarding John B (Reprint); O'Clock George D  
AUTHOR ADDRESS: Hot Springs, SD, USA\*\*USA

JOURNAL: Official Gazette of the United States Patent and Trademark Office  
Patents 1232 (1): Mar. 7, 2000 2000

MEDIUM: e-file

PATENT NUMBER: US 6035236 PATENT DATE GRANTED: March 07, 2000 20000307

PATENT CLASSIFICATION: 607-53 PATENT ASSIGNEE: Bionergy Therapeutics,  
Inc., Hot Springs, SD, USA PATENT COUNTRY: USA

ISSN: 0098-1133

DOCUMENT TYPE: Patent

RECORD TYPE: Abstract

LANGUAGE: English

...ABSTRACT: a body part in order to provide microcurrent stimulation therapy to the body part. The apparatus preferably comprises a first sweep wave or sweep frequency **signal generator** configured to generate a first sweep wave signal, a buffer amplifier circuit configured to receive the first sweep wave signal from the first sweep **signal generator** and amplify and buffer the sweep wave signal creating a buffered sweep wave signal. In addition, the apparatus preferably includes a **current limiting** circuit configured to receive the buffered sweep wave signal from the buffer amplifier circuit and **limit** the amount of **current** supplied to the body part. Finally, the apparatus preferably comprises a probe for applying the sweep wave signal to the body part. The apparatus may further comprise a second **signal generator** for generating a second signal which may comprise either a sweep wave signal or a non-sweep wave signal. The apparatus also will include a...

27/3,KWIC/12 (Item 1 from file: 8)

DIALOG(R)File 8:Ei Compendex(R)

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03591479 E.I. Monthly No: EIM9304-022248

**Title: Low noise, microwave signal generation using cryogenic, sapphire dielectric resonators: an update.**

Author: Driscoll, M. M.; Weinert, R. W.

Corporate Source: Westinghouse Electronics Systems, Baltimore, MD, USA

Conference Title: Proceedings of the 1992 IEEE Frequency Control Symposium

Conference Location: Hershey, PA, USA Conference Date: 19920527

E.I. Conference No.: 17594

Source: Proceedings of the Annual Frequency Control Symposium. Publ by IEEE, IEEE Service Center, Piscataway, NJ, USA (IEEE cat n 92CH3083-3). p 157-162

Publication Year: 1992

CODEN: PAFSDB ISSN: 0161-6404 ISBN: 0-7803-0476-4

Language: English

...Abstract: at temperatures in the range 4K to 77K. Based on considerations of exceptionally high Q and moderate signal handling capability, resonator use as a microwave **signal generator** reference element should allow realization of short-term frequency stabilities unattainable using alternative technologies. In this paper, we will report on recent results obtained at...

...values for flicker-of frequency noise is 10dB poorer than anticipated, based on the large value (72uV/Hz) of discriminator sensitivity obtained. Possible causes for **current limitations** in signal near-carrier spectral performance include resonator short-term frequency fluctuations resulting from environmentally-induced effects and/or frequency-drive (AM-to-FM)

effects...

27/3,KWIC/13 (Item 2 from file: 8)  
DIALOG(R)File 8:EI Compendex(R)  
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00310707 E.I. Monthly No: EI7306028812 E.I. Yearly No: EI73018870  
**Title: VISUAL ZERO-BEAT INDICATOR USES REVERSE-POLARITY LEDs.**  
Author: Graf, Calvin R.  
Corporate Source: Kelly Air Force Base, San Antonio, Tex  
Source: Electronics v 46 n 6 Mar 15 1973 p 119  
Publication Year: 1973  
Language: ENGLISH

...Abstract: MINUS 5 hertz. The display can be driven by an audio-frequency voltage from a single-sideband receiver or by the signal for an rf **signal - generator** headset. A **current - limiting** resistor protects both the LEDs from overload.

27/3,KWIC/14 (Item 1 from file: 34)  
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci  
(c) 2004 Inst for Sci Info. All rts. reserv.

03868751 Genuine Article#: QN005 No. References: 15  
**Title: PERFORMANCE OF A GPR SYSTEM WHICH USES STEP FREQUENCY SIGNALS**  
Author(s): KONG FN; BY TL  
Corporate Source: NORWEGIAN GEOTECH INST,POB 3930/N-0806 OSLO//NORWAY/  
Journal: JOURNAL OF APPLIED GEOPHYSICS, 1995, V33, N1-3 (JAN), P15-26  
ISSN: 0926-9851  
Language: ENGLISH Document Type: ARTICLE (Abstract Available)

Abstract: This paper discusses the advantages and disadvantages of a Ground Penetrating Radar (GPR) system which utilises a network analyser as the radar **signal generator** and the radar receiver. Practical test results are presented in order to show the performance of this GPR system based on the use of a...

Research Fronts: 93-1745 001 (ELECTRICAL- **IMPEDANCE** TOMOGRAPHY; DAMAGE DEPTH PROFILES IN ION- **IMPLANTED** SILICON; RECONSTRUCTION ALGORITHMS; LASER INTERFERENCE FRINGE)

27/3,KWIC/15 (Item 2 from file: 34)  
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci  
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02022369 Genuine Article#: JU924 No. References: 18  
**Title: CLINICAL-EXPERIENCE WITH A HELICAL BIPOLAR STIMULATING LEAD**  
Author(s): TARVER WB; GEORGE RE; MASCHINO SE; HOLDER LK; WERNICKE JF  
Corporate Source: CYBERON INC,17448 HIGHWAY 3,SUITE 100/WEBSTER//TX/77598;  
BAYLOR COLL MED,DEPT NEUROSURG/HOUSTON//TX/77030  
Journal: PACE-PACING AND CLINICAL ELECTROPHYSIOLOGY, 1992, V15, N10 (OCT), P1545-1556  
ISSN: 0147-8389  
Language: ENGLISH Document Type: ARTICLE (Abstract Available)

Abstract: Over 100 patients have been treated for partial epilepsy using a NeuroCybernetic **Prosthesis** System (NCP). The NCP System is comprised of an **implantable pulse generator**, an **implantable bipolar**



stimulating lead, and an external communication system. The lead delivers electrical impulses from the NCP Generator to the vagus nerve, and includes a connector end that plugs into the generator, a silicone insulated lead body, and the helical electrode array that attaches to the nerve. The surgical **implantation** technique has a significant impact on lead reliability and performance. The lead electrode has performed well to date. Modifications to further improve reliability have been...

27/3,KWIC/16 (Item 1 from file: 73)  
DIALOG(R)File 73:EMBASE  
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11560416 EMBASE No: 2002132848

**Indications for sacral neuromodulation**

SACRALE NEUROMODULATIE: DE INDICATIESTELLING

Scheepens W.A.; Van Koeveringe G.A.; Weil E.H.J.; Van Kerrebroeck Ph.E.V.  
G.A. Van Koeveringe, Afdeling Urologie, Academisch Ziekenhuis Maastricht,  
Postbus 5800, 6202 AZ Maastricht Netherlands

Nederlands Tijdschrift voor Urologie ( NED. TIJDSCHR. UROL. ) ( Netherlands) 2002, 10/1 (13-21)

CODEN: NTURE ISSN: 0929-0184

DOCUMENT TYPE: Journal ; Review

LANGUAGE: DUTCH SUMMARY LANGUAGE: ENGLISH; DUTCH

NUMBER OF REFERENCES: 28

...incontinence and chronic urinary retention. Using this treatment an electrode is placed in close proximity of the 3SUPrd sacral root, which is stimulated via an **implantable pulse generator** (IPG). To evaluate if SNM therapy can be applied in a patient, a temporary electrode is used (PNE-test). More and more other disorders are...

...therefore we are dependent on the PNE-test. This minimally invasive procedure can be performed in an outpatient setting and therefore compensates amply for our **limited** knowledge concerning predictive factors. Hence, in a patient with functional voiding dysfunction, where conservative treatment was not effective, a PNE-test should be considered.

27/3,KWIC/17 (Item 2 from file: 73)  
DIALOG(R)File 73:EMBASE  
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05988976 EMBASE No: 1995017587

**The use of impedance measurements to detect pacemaker lead failure during follow-up**

**IMPEDANZMESSUNG** IN DER SCHRITTMACHERKONTROLLE ZUR ERKENNUNG VON ELEKTRODENFEHLERN

Buckingham T.A.; Alagona Jr. P.; Batey R.; Belott P.; Byrd C.L.; Gallastegui J.L.; Hayes D.L.; Johnson W.B.; Mead H.; Parsonnet V.; Reynolds D.; Simonson J.; Tonder L.M.; Wheelan K.

Ctr Hopitalier Universitaire Vaudois, Division du Cardiologie, Rue du Bugnon, 1011 Lausanne Switzerland

European Journal of Cardiac Pacing and Electrophysiology ( EUR. J. CARD. PACING ELECTROPHYSIOL. ) (Germany) 1994, 4/4 (242-246)

CODEN: EJCEE ISSN: 0939-6780

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH; GERMAN

**The use of impedance measurements to detect pacemaker lead failure during follow-up**

**IMPEDANZMESSUNG IN DER SCHRITTMACHERKONTROLLE ZUR ERKENNUNG VON ELEKTRODENFEHLERN**

In order to determine whether lead **impedance** obtained by telemetry could be used to detect pacemaker lead failure, we examined data on lead **impedance** recorded on pacemaker leads at 14 centres. 1329 leads with an **implant impedance** and an **impedance** measured  $\geq 6$  months post **implant** were included. Of these, 5 had conductor fractures and 48 were suspected or confirmed failures by other mechanisms. At the time of **implant**, there was a poor correlation between lead **impedance** measurements made by pacemaker system analyzer (PSA) with those made by radiotelemetry from the **implantable pulse generator** (IPG). The 5 patients with conductor fractures did not have a rise in lead **impedance** before lead failure and were eliminated from further analysis. An absolute lead **impedance** as well as percent change in lead **impedance** criteria were identified that provided good specificity and moderate sensitivity for the detection of lead failures. A lead **impedance** of  $\leq 300$  ohms at follow-up gave a sensitivity of 42% and a specificity of 99% for the identification of a lead failure. A  $\geq 40\%$  decrease of lead **impedance** from the time of **implant** gave a sensitivity of 33% and a specificity of 98%. These results suggest that **impedance** can be used as a screening tool during routine follow-up of pacemaker patients. However, the sensitivity for lead failure using these criteria is **limited** and the clinician should continue to use other parameters to evaluate lead performance and integrity.

**MEDICAL DESCRIPTORS:**

\*artificial heart pacemaker; \* **prosthesis** failure  
article; diagnostic value; follow up; human; **impedance** ; priority journal;  
pulse generator; screening test; telemetry

27/3,KWIC/18 (Item 3 from file: 73)  
DIALOG(R)File 73:EMBASE  
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04726610 EMBASE No: 1991219964

**Possibilities of ultrasound catheters**

Breyer B.; Ferek-Petric B.

Dept. of Medical Physics and Bioengineering, Gynecological Cancer Center and Cardiac Surgery Unit, Zagreb Yugoslavia

International Journal of Cardiac Imaging ( INT. J. CARD. IMAGING ) ( Netherlands) 1991, 6/3-4 (277-284)

CODEN: IJCIE ISSN: 0167-9899

DOCUMENT TYPE: Journal; Short Survey

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

...system can be used for early detection of cracking of the pacing lead insulation. In this case the marker transducer works as a high-frequency **signal generator** and detects characteristic capacitance changes better than other methods. The electronic circuit for measurement is built into the pacemaker. Other non-imaging applications have also...

...destroyed. Such an automatic 'proximity fuse' can help to avoid the firing of energy at too great a distance from the His bundle. Technology of **implantable** defibrillators yields the possibility for a double transducer arrangement, one transducer mounted at the patch and the other being the marker transducer. Using on-line...

...other hollow organs. The system operates at 30 kHz/60W. Safety aspects of ultrasound catheters will be discussed, showing results of the

measurement of shunt **impedance** at different frequencies, which sets the **limit** for the electrical safety design.

27/3,KWIC/19 (Item 4 from file: 73)  
DIALOG(R)File 73:EMBASE  
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04235993 EMBASE No: 1990118536

**Model of intestinal continence using an implantable pulse generator and a myoprosthetic sphincter**

Rosenberg P.H.; Geiss A.C.; Nelson R.L.; Tortolani A.J.  
Department of Surgery, North Shore University Hospital-Cornell Medical Center, Manhasset, NY United States  
ASAIO Transactions ( ASAIO TRANS. ) (United States) 1989, 35/3 (222-225)  
CODEN: ASATE ISSN: 0889-7190  
DOCUMENT TYPE: Journal; Article  
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

**Model of intestinal continence using an implantable pulse generator and a myoprosthetic sphincter**

Past attempts at artificial continence using a wide range of surgical procedures and devices have met with only **limited** success because of excessive rates of infection, rejection, incomplete continence, and technical difficulty. Presented here is a model of artificial continence using a lumen-occluding Teflon(R) loop powered by the rectus abdominus muscle and activated by an **implantable pulse generator**. Eight female mongrel dogs underwent laparotomy with creation of a Brooke ileostomy and insertion of a hand-tooled Teflon band around the ileum. The free...

...under tension, to the posterior rectus sheath creating extrinsic compression of the bowel by the tightened loop. After denervation of the rectus, stimulating electrodes were **implanted** and connected to a transcutaneously activated pulse generator (Medtronic SE-4). Stimulation caused contraction of the muscle segment. As the free ends of the **prosthetic** sling approach each other, the occlusive band loosens, resulting in free drainage of intestinal contents and reduction in intraluminal pressure of the proximal ileum. Withdrawl...

?

8/3,KWIC/1 (Item 1 from file: 2)  
DIALOG(R)File 2:INSPEC  
(c) 2004 Institution of Electrical Engineers. All rts. reserv.

7658904 INSPEC Abstract Number: A2003-14-5280-013, B2003-07-2315-004  
**Title: Pulsed corona generation using a high-power semiconductor diode switch**  
Author(s): Pemen, A.J.M.; Grekhov, I.V.; van Heesch, E.J.M.; Yan, K.; Nair, S.A.; Korotkov, S.V.  
Author Affiliation: Dept. of Electr. Eng., Eindhoven Univ. of Technol., Netherlands  
Conference Title: Conference Record of the Twenty-Fifth International Power Modulator Symposium and 2002 High-Voltage Workshop (Cat. No.02CH37381) p.203-6  
Publisher: IEEE, Piscataway, NJ, USA  
Publication Date: 2002 Country of Publication: USA 740 pp.  
ISBN: 0 7803 7540 8 Material Identity Number: XX-2003-00144  
U.S. Copyright Clearance Center Code: 0-7803-7540-8/02/\$17.00  
Conference Title: Conference Record of the Twenty-Fifth International Power Modulator Symposium and 2002 High-Voltage Workshop. International Power Modulator Conference  
Conference Sponsor: Electron Devices Soc. & Dielectrics & Electron Insulation Soc. IEEE  
Conference Date: 30 June-3 July 2002 Conference Location: Hollywood, CA, USA  
Language: English  
Subfile: A B  
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...Abstract: paper describes the application of such a 'drift-step recovery diode' for high-power pulsed corona plasma generation. The principle of the diode-based nanosecond **pulse generator** is discussed in detail. The generator is coupled to a wire-plate corona reactor via a transmission-line-transformer, which has the following advantages: (i) increase of the output voltage, (ii) **impedance** transformation to improve the matching with the reactor, (iii) protection of the switch against reflections and mismatches, (iv) **limitation** of the switch **current** during short-circuit or breakdowns, and (v) easy coupling with a DC-bias voltage. The developed circuit has been tested at both a matched resistive ...

...Identifiers: **impedance** transformation

8/3,KWIC/2 (Item 2 from file: 2)  
DIALOG(R)File 2:INSPEC  
(c) 2004 Institution of Electrical Engineers. All rts. reserv.

01121839 INSPEC Abstract Number: B77040676, C77026824  
**Title: Pulse duration stabilized power supply for 5 V/1000 W**  
Author(s): Siebert, H.-P.  
Journal: Elektronik vol.26, no.6 p.94-8  
Publication Date: June 1977 Country of Publication: West Germany  
CODEN: EKRKAR ISSN: 0013-5658  
Language: German  
Subfile: B C

...Abstract: is then converted by four Darlington transistors into a 20 kHz alternating voltage that feeds the ferrite core supply transformer through a 2  $\mu$  F **capacitor**. Its secondary is rectified by a Schottky rectifier which after filtering provides the 5 volt output. The circuit

diagram of the circuit is shown and...

... in parallel after rectification. The efficiency of the transformer is about 99% operating at a flux density of 150 mT. The operation of the clock **pulse generator** and pulse duration modulator as well as output voltage and **current limit** control are described. Test results on a completed unit show an overall efficiency of 82.5%.

8/3,KWIC/3 (Item 3 from file: 2)  
DIALOG(R)File 2:INSPEC  
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00855768 INSPEC Abstract Number: A76007606, B76005161  
**Title: Pulse generators for electro-optical ultra-high-speed shutters**  
Author(s): Pfeiffer, W.  
Journal: *Feinwerktechnik & Messtechnik* vol.83, no.6 p.275-80  
Publication Date: Aug.-Sept. 1975 Country of Publication: West Germany  
CODEN: FEMEDO ISSN: 0340-1952  
Language: German  
Subfile: A B

...Abstract: high-speed shutters needing a very high pulsed control-voltage can be fed by fully transistorized pulse generators employing avalanche transistors. Because the impulse peak **current** is **limited** to about 20 A, no coaxial connecting cables may be used and the **pulse generator** has to be mounted very close to the shutter. The pulse risetimes are limited to some nanoseconds by the **capacitive** charging currents. For shortening the pulse tail in order to obtain short shutter times only nonlinear components may be used. High-speed shutters are realized...

...Identifiers: **capacitive** charging currents

8/3,KWIC/4 (Item 4 from file: 2)  
DIALOG(R)File 2:INSPEC  
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00603031 INSPEC Abstract Number: B74008107  
**Title: Body organ stimulator with voltage converter**  
Inventor(s): Raddi, W.J.  
Patent Number: US 3707974 Issue Date: 730102  
Application Date: 701211  
Priority Appl. Number: US 97255  
Country of Publication: USA  
Language: English  
Subfile: A B

...Abstract: organ stimulator is provided having a power supply, a pulse generating circuit, a voltage converter and output terminals. The voltage converter includes at least one **capacitor** which is arranged such that, during the interpulse interval between pulses from a **pulse generator**, the **capacitor** charges to approximately the voltage of the power supply and upon application of a pulse to the voltage converter, the combined voltages of the power supply and the charged **capacitor** are supplied to the output terminals. A novel **current limiting** circuit is also provided which regulates the output pulse current of the pacer.

8/3,KWIC/5 (Item 5 from file: 2)

DIALOG(R)File 2:INSPEC

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00188985 INSPEC Abstract Number: C70019491

**Title: Battery operated fork lift truck**

Assignee(s): Ransome Sims & Jefferies Ltd

Patent Number: GB 1165891 Issue Date: 691001

Application Date: 660928

Priority Appl. Number: GB 27353/65 Priority Appl. Date: 650628

Country of Publication: UK

Language: English

Subfile: C

...Abstract: c. motor to and from the battery, incorporating a thyristor for connecting the motor to the battery and a second thyristor for connecting a commutating **capacitor** to switch off the first thyristor. Pulses are applied in sequence to the thyristors to cause them to conduct alternately, their rate being controlled to...

... A diode in parallel with the armature conducts when the motor self excites. The current through the diode actuates a relay circuit connected to the **pulse generator** so that this supplies pulses to the thyristors so as to keep the mean motor current at a low level. The generator incorporates a free...

... by transistor circuits to regulate the pulse timings. A further control arrangement responds to current flow in a resistor in series with the battery to **limit** the **current** in the motor.

8/3,KWIC/6 (Item 6 from file: 2)

DIALOG(R)File 2:INSPEC

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00037297 INSPEC Abstract Number: B69011949

**Title: Nonlinearity of cardiac pacemaker electrodes**

Author(s): Jaron, D.; Briller, S.A.; Schwan, H.P.; Geselowitz, D.B.

Journal: IEEE Transactions on Biomedical Engineering vol.BME-16, no.2 p.132-8

Publication Date: April 1969 Country of Publication: USA

CODEN: IEBEAX ISSN: 0018-9294

Language: English

Subfile: A B

...Abstract: domain measurements, current pulses of 1.0 to 2.0 ms duration and varying amplitudes were applied to the electrodes. Frequency domain measurements of polarization **impedance** were made with an **impedance** bridge, utilizing sinusoidal currents of varying amplitudes at frequencies between 0.1 and 10k Hz. The limit voltage of linearity (threshold of nonlinearity) was approximately the same in both frequency and time domain measurements for all electrodes tested. In the frequency domain, the **limit current** of linearity decreased with decreasing frequencies. In the time domain, the **limit current** of linearity decreased with increasing pulse duration. Comparison of current levels utilized by present day pacemakers with those studied here shows that all **pacemaker** electrodes operate in the nonlinear range where accelerated electrochemical reactions may occur. Elgiloy and stainless steel exhibited hysteresis at these current levels, a finding suggesting...

8/3,KWIC/7 (Item 1 from file: 5)

DIALOG(R)File 5:Biosis Previews(R)  
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0014269656 BIOSIS NO.: 200300238375

**Robotically assisted left ventricular epicardial lead implantation for biventricular pacing.**

AUTHOR: DeRose Joseph J (Reprint); Ashton Robert C; Belsley Scott; Swistel Daniel G; Vloka Margot; Ehlert Frederick; Shaw Roxana; Sackner-Bernstein Jonathan; Hillel Zak; Steinberg Jonathan S

AUTHOR ADDRESS: 1090 Amsterdam Avenue, Suite 7A, New York, NY, 10025, USA\*\*  
USA

AUTHOR E-MAIL ADDRESS: jjd11@columbia.edu

JOURNAL: Journal of the American College of Cardiology 41 (8): p1414-1419  
April 16, 2003 2003

MEDIUM: print

ISSN: 0735-1097 (ISSN print)

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

...ABSTRACT: LV) epicardial approach. BACKGROUND: Approximately 10% of patients undergoing biventricular pacemaker insertion have a failure of coronary sinus (CS) cannulation. Rescue therapy for these patients **currently** is **limited** to standard open surgical techniques. METHODS: Ten patients with congestive heart failure (New York Heart Association class 3.4+-0.5) and a widened QRS...

...of the LV. Intraoperative lead threshold was 1.0+-0.5 V at 0.5 ms, R-wave was 18.6+-8.6 mV, and **impedance** was 1,143+-261 ohms at 0.5 V. Complications included an intraoperative LV injury and a postoperative pneumonia. Improvements in exercise tolerance (8 of...

...six months follow-up. Lead thresholds have remained unchanged (2.1+-1.4 V at 0.5 ms, p=NS), and a significant drop in **impedance** (310+-59 ohms, p<0.001) has been measured. CONCLUSIONS: Robotic LV lead placement is an effective and novel technique which can be used for...

8/3,KWIC/8 (Item 2 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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0011954419 BIOSIS NO.: 199900214079

**Taking advantage of sophisticated pacemaker diagnostics**

AUTHOR: Nowak Bernd (Reprint)

AUTHOR ADDRESS: II. Medical Clinic, University Mainz, D-55101, Mainz, Germany\*\*Germany

JOURNAL: American Journal of Cardiology 83 (5B): p172D-179D March 11, 1999  
1999

MEDIUM: print

ISSN: 0002-9149

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

...ABSTRACT: another, can pose challenges during analysis of device function. Standard pacemaker diagnostics are measured data, electrogram telemetry, marker annotations and event counters, albeit with their **current limitations**. New diagnostic features discussed include time-based diagnostics, histograms of sensed amplitudes, pacing

thresholds, or **impedance** trending. Mode-switching algorithms, combined with diagnostic features, facilitate the use of dual-chamber devices in patients with paroxysmal atrial tachyarrhythmias. The introduction of electrogram...

8/3,KWIC/9 (Item 3 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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0002914669 BIOSIS NO.: 198069028656

**CURRENT NOISE PARAMETERS DERIVED FROM VOLTAGE NOISE AND IMPEDANCE IN EMBRYONIC HEART CELL AGGREGATES**

AUTHOR: CLAY J R (Reprint); DEFELICE L J; DEHAAN R L  
AUTHOR ADDRESS: DEP ANAT, EMORY UNIV, ATLANTA, GA 30322, USA\*\*USA  
JOURNAL: Biophysical Journal 28 (2): p169-184 1979  
ISSN: 0006-3495  
DOCUMENT TYPE: Article  
RECORD TYPE: Abstract  
LANGUAGE: ENGLISH

**CURRENT NOISE PARAMETERS DERIVED FROM VOLTAGE NOISE AND IMPEDANCE IN EMBRYONIC HEART CELL AGGREGATES**

ABSTRACT: Membrane **impedance** and voltage noise was recorded in the pacemaker range of potentials (-70--59 mV) from spheroidal aggregates of 7 day embryonic chick ventricle cells made...

...RC [pulmonary resistance capacitance] time constant is 22 ms at -70 mV and increases to 146 ms at -59 mV. The aggregate transmembrane small-signal **impedance** can be represented by a parallel RC circuit itself in parallel with an inductive branch consisting of a resistor (rL) and an inductor (L) in...

...constant of the inductive branch (L/rL) is 340 ms, and is only weakly dependent on potential. Correlation functions of aggregate voltage noise and the **impedance** data were modeled by a population of channels with simple open-close kinetics. The time constant of a channel derived from the noise analysis is 300 ms. The low frequency **limit** of the **pacemaker current** noise (SI[O]), derived from the voltage noise and **impedance**, increases from 10-20 A2/Hz .cntdot. cm2 at -67 mV to 10-19 A2/Hz .cntdot. cm2 at -61 mV.

8/3,KWIC/10 (Item 4 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
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0002122220 BIOSIS NO.: 197763043076

**TECHNIQUES AND SIGNIFICANCE OF THRESHOLD MEASUREMENT FOR CARDIAC PACING RELATIONSHIP TO OUTPUT CIRCUIT OF CARDIAC PACEMAKERS**

AUTHOR: BAROLD S S; WINNER J A  
JOURNAL: Chest 70 (6): p760-766 1976  
ISSN: 0012-3692  
DOCUMENT TYPE: Article  
RECORD TYPE: Abstract  
LANGUAGE: Unspecified

...ABSTRACT: of pacing circuits: those with constant current, as in most external (temporary) pulse generators and those with constant voltage, as



in many implantable pulse generators. **Current - limited** pulse generators have features of both constant-current and constant-voltage circuitry. The current threshold is helpful in determining the integrity of the electrode-tissue...

...prime factor responsible for successful stimulation. Voltage thresholds are useful for information on lead position and integrity, especially when voltage and current are measured simultaneously. **Impedance** (calculated from voltage and current during stimulation) can be helpful in the diagnosis of lead fractures, insulation breaks and position problems. Threshold and **impedance** are entirely unrelated factors, each providing specific and different information about a pacing system. Threshold may also be measured in terms of charge and energy...

...pulse (at a constant impulse amplitude). The concept of safety margins is important when measuring long-term threshold at the time of replacement of a **pulse generator**.

DESCRIPTORS: **IMPEDANCE**

8/3,KWIC/11 (Item 1 from file: 6)  
DIALOG(R)File 6:NTIS  
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1916639 NTIS Accession Number: DE95017118

**Ionization tube simmer current circuit**

(PATENT APPLICATION)

Steinkraus, R. F.

Lawrence Livermore National Lab., CA.

Corp. Source Codes: 068147000; 9513035

Sponsor: Department of Energy, Washington, DC.

Report No.: PAT-APPL-8-087 221

Filed 7 Jul 93 14p

Languages: English Document Type: Patent

Journal Announcement: GRAI9602; ERA9602

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NTIS Prices: PC N03/MF A04

This invention is comprised of a highly efficient flash lamp simmer current circuit which utilizes a fifty percent duty cycle square wave **pulse generator** to pass a **current** over a **current limiting** inductor to a full wave rectifier. The DC output of the rectifier is then passed over a voltage smoothing **capacitor** through a reverse current blocking diode to a flash lamp tube to sustain ionization in the tube between discharges via a small simmer current. An alternate embodiment of the circuit combines the **pulse generator** and inductor in the form of an FET off line square wave generator with an **impedance** limited step up output transformer which is then applied to the full wave rectifier as before to yield a similar simmer current.

8/3,KWIC/12 (Item 2 from file: 6)  
DIALOG(R)File 6:NTIS  
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0377265 NTIS Accession Number: AD-758 640/XAB

**A 5 MV Radial Insulator Electron Gun for an Electron Ring Accelerator**

(Interim rept)

Condon, J. J. ; Lupton, W. H.

Naval Research Lab Washington D C

Corp. Source Codes: 251950

Report No.: NRL-MR-2569

Mar 73 24p

Journal Announcement: GRAI7311

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NTIS Prices: PC A02/MF A01

... is considered as an approach for a stable mounting of a vacuum diode electron gun and connection to a 5-MV, 70-ohms, oil dielectric **pulse generator**. A rationale for determining the electric field permitted without breakdown along the insulator-vacuum interface is presented. The electric field along this interface and on...

...is made to design and construct such a radial insulator from cast nylon. An external magnetic field must be used to prevent vacuum breakdown and **limit** the **current** from the cathode stalk. The electron gun **impedance** cannot be calculated at this time. (Author)

? s pacemaker?

14/3,KWIC/1 (Item 1 from file: 2)

DIALOG(R)File 2:INSPEC

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7253559 INSPEC Abstract Number: B2002-06-8360-034

**Title: An IGCT based solid state high voltage (35kV) pulse generator for PEF food processing**

Author(s): Changjiang Wang; Zhang, Q.H.

Author Affiliation: Dept. of Food Sci. & Technol., Ohio State Univ., Columbus, OH, USA

Conference Title: 2000 26th Annual Conference of the IEEE Industrial Electronics Society. IECON 2000. 2000 IEEE International Conference on Industrial Electronics, Control and Instrumentation. 21st Century Technologies and Industrial Opportunities (Cat. No.00CH37141) Part vol.2 p.965-70 vol.2

Publisher: IEEE, Piscataway, NJ, USA

Publication Date: 2000 Country of Publication: USA 4 vol.(xxviii+2997) pp.

ISBN: 0 7803 6456 2 Material Identity Number: XX-2001-02793

U.S. Copyright Clearance Center Code: 0-7803-6456-2/00/\$10.00

Conference Title: Proceedings of 2000 IEEE International Conference on Industrial Electronics, Control and Instrumentation

Conference Date: 22-28 Oct. 2000 Conference Location: Nagoya, Japan

Language: English

Subfile: B

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**Abstract:** The design of an IGCT based solid state high voltage **pulse generator** for food processing is described in this paper. The experimental results from a prototype machine confirm its feasibility. The half-bridge topology plus step-up...

... voltage. Overcurrent protection against arcing in the treatment chamber is essential for normal operation of the IGCT, which can be achieved by adding a low- **inductance current - limit** resistor in series with the transformer. EMC and EMI should be taken into consideration in the design of such high-voltage pulse generators.

...Identifiers: low- **inductance** current-limit resistor...

14/3,KWIC/2 (Item 2 from file: 2)

DIALOG(R)File 2:INSPEC

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01529419 INSPEC Abstract Number: B80032902

**Title: Use of transformers in producing high power output from homopolar generators**

Author(s): Lupton, W.H.; Ford, R.D.; Conte, D.; Lindstrom, H.B.; Vitkovitsky, I.M.

Author Affiliation: Naval Res. Lab., Washington, DC, USA

Conference Title: 2nd IEEE International Pulsed Power Conference Digest of Papers p.83-6

Publisher: IEEE, New York, NY, USA

Publication Date: 1979 Country of Publication: USA xiii+508 pp.

Conference Sponsor: IEEE, et al

Conference Date: 12-14 June 1979 Conference Location: Lubbock, TX, USA

Language: English

Subfile: B

**Abstract:** Systems using high current pulse transformers to exploit the

high energy storage capability of homopolar generators or other **limited current** sources are analysed. The stepped-up secondary current can be established either by current interruption when the primary is also used for energy storage or by commutation of current into the primary from a separate storage **inductor** . For high-power pulse generators the primary insulation and power supply are protected by subsequent crowbarring of the primary. An example is given of a design for matching the NRL homopolar generator with 1.46 mH **inductor** to a 1-  $\mu$  H, megavolt level **inductive pulse generator** .

...Identifiers: storage **inductor** ;

14/3,KWIC/3 (Item 3 from file: 2)  
DIALOG(R)File 2:INSPEC  
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00593255 INSPEC Abstract Number: B74004534

**Title: Measurement and indication of power by means of electronic converters**

Author(s): Hochrainer, H.

Author Affiliation: Danubia AG, Wien, Austria

Journal: Elektrotechnik und Maschinenbau vol.90, no.9 p.409-20

Publication Date: Sept. 1973 Country of Publication: Austria

CODEN: EKMB A9 ISSN: 0012-8058

Language: German

Subfile: B

Abstract: A brief review of the principle of the conventional **induction** -type electricity meter is followed by an exposition of the principle of a **current** -frequency converter (integrator- **limiter** -resetter- **pulse generator** ) with interval formation by (a) polarity reversal (2-ramp method); alternatively (b) by means of constant condenser discharge. The practical realisation of an integrator incorporating...

Identifiers: **induction** type electricity meters...

14/3,KWIC/4 (Item 1 from file: 8)  
DIALOG(R)File 8:Ei Compendex(R)  
(c) 2004 Elsevier Eng. Info. Inc. All rts. reserv.

06001696 E.I. No: EIP02066849873

**Title: An IGCT based solid state high voltage (35kV) pulse generator for PEF food processing**

Author: Wang, Changjiang; Zhang, Q. Howard

Corporate Source: Nonthermal Food Processing Res. Grp. Dept. of Food Science and Technology The Ohio State University, Columbus, OH 43310, United States

Conference Title: 26th Annual Conference of the IEEE Electronics Society IECON 2000

Conference Location: Nagoya, Japan Conference Date: 20001022-20001028

E.I. Conference No.: 58966

Source: IECON Proceedings (Industrial Electronics Conference) v 2 2000. p 965-970 (IEEE cat n 01CB37141)

Publication Year: 2000

CODEN: IEPREA

Language: English

Abstract: The design of an IGCT based solid state high voltage **pulse generator** for food processing is described. The half-bridge topology plus step-up transformer is a cost-effective approach to reach high voltage.

Over-current protection against arching in treatment chamber is essential for normal operation of IGCT, which can be achieved by adding a low-inductance current - limit resistor in series with the transformer.  
(Edited abstract) 7 Refs.

14/3,KWIC/5 (Item 2 from file: 8)  
DIALOG(R)File 8:EI Compendex(R)  
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03482467 E.I. Monthly No: EI9209111844  
**Title: Calculating nonlinear saturation choke with one turn.**  
Author: Vdovin, S. S.  
Source: Radiotekhnika n 3 Mar 1991 p 84-85  
Publication Year: 1991  
CODEN: 500006  
Language: Russian

Abstract: A method for calculating a one-turn choke, connected into a pulse generator circuit for limiting the current rise rate, is given. The design basis of the coaxial-type saturation choke is a short-circuited coaxial line section made of an external tubular...

...circuits made of permalloys. It is shown that the choke organically matches with a pulse transformer, providing for absolutely complete absence of undesired connecting circuit inductors . 4 Refs. In Russian.

Descriptors: ELECTRIC INDUCTORS --\*

14/3,KWIC/6 (Item 1 from file: 34)  
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci  
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01054069 Genuine Article#: FR771 No. References: 48  
**Title: ANTITACHYCARDIA STIMULATION FOR SUPRAVENTRICULAR AND VENTRICULAR-TACHYCARDIA WITH AND WITHOUT CARDIOVERTER DEFIBRILLATOR**  
Author(s): KLEIN H  
Corporate Source: MED HSCH HANNOVER,KARDIOL ABT,KONSTANTY GUTSCHOW STR 8/D-3000 HANNOVER 61//FED REP GER//; MED HSCH HANNOVER,ZENTRUM INNERE MED/D-3000 HANNOVER 61//FED REP GER/  
Journal: HERZ, 1991, V16, N3, P182-198  
Language: GERMAN Document Type: ARTICLE (Abstract Available)

...Abstract: pacing with constantly decreasing intervals between multiple stimuli and addition of further impulses for each new termination attempt. The risk of acceleration of tachycardia or induction of non-clinical tachyarrhythmias is higher with burst-stimulation than with single or double extra stimuli. Fast tachycardia rates are more prone to acceleration than...

...permanent antitachycardia pacing is a thoroughly performed preoperative electrophysiologic study in order to identify the most reliable and effective tachycardia termination mode. This requires multiple induction of the clinical tachycardia under various conditions, different activity or posture states as well as under the influence of antiarrhythmic drugs. The indication for implantation of an antitachycardia pacemaker in patients with supraventricular tachycardia is currently limited to those who are not candidates for DC- or high-frequency catheter ablation or in whom an electrophysiologically guided surgical approach is not feasible or

proved unsuccessful. Patients with antitachycardia **pacemakers** should be considered as refractory to antiarrhythmic drug therapy. The most suitable type of tachycardia for antitachycardia pacing are the AV-nodal reentrant tachycardia and...

?

14/3,KWIC/1 (Item 1 from file: 148)  
DIALOG(R)File 148:Gale Group Trade & Industry DB  
(c)2004 The Gale Group. All rts. reserv.

10716419 SUPPLIER NUMBER: 53459651 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Ethernet 10BaseT simulator jig yields emissions.**  
CHENIER, GLEN  
EDN, 43, 22, 97(1)  
Oct 22, 1998  
ISSN: 0012-7515 LANGUAGE: English RECORD TYPE: Fulltext  
WORD COUNT: 1116 LINE COUNT: 00089

... is 6.5 mA with the HCMOS oscillator and 85 (micro)A with the LPC661 oscillator. Long battery life is a secondary design goal.

The **pulse generator** uses a 100-nsec RC-delay line ((R.sub.1), (C.sub.1)), and a Schmitt-trigger buffer ((IC.sub.2B)) to present the 50...

...wide pulses at 20-msec intervals. The pulse-driver gate ((IC.sub.3)) inverts these pulses to drive the output transformer through a 390 (Ohm) **current - limiting** resistor ((R.sub.2)). The transformer is a 1-to-1 Ethernet transformer. You can use other types of transformers with built-in filters; however...

...reradiating the data packets from the EUT and causing false emission readings. Even with (V.sub.CC) off, (IC.sub.4) has a high input **impedance** to avoid generating and reradiating harmonics of the data packets. When you depress the EUT-monitor test button, any input data activity causes the (IC ...

...high output from (IC.sub.5)'s Schmitt-trigger inverter, which in turn lights the LED.

(R.sub.5), a 200 (Ohm) resistor, slows the **capacitor** 's discharge time constant enough to ensure that any overshoot or ringing from the EUT's positive-going, individual link test pulses do not light...

...a pulse density sufficient to light the LED. Once discharged, the low-leakage diode, (D.sub.1), and the 1M (R.sub.4) increase the **capacitor** 's recharge time (the period after the end of the packet when (IC.sub.4)'s output is high again). The lengthy recharge time extends...

14/3,KWIC/2 (Item 2 from file: 148)  
DIALOG(R)File 148:Gale Group Trade & Industry DB  
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01884754 SUPPLIER NUMBER: 02992286 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Optical data communications; an experimental infrared joystick interface; a new class of semiconductors.**  
Mims, Forest M., III  
Computers & Electronics, v21, p90(8)  
Nov, 1983  
ISSN: 0745-1458 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT  
WORD COUNT: 4840 LINE COUNT: 00383

... of one of the channels shown in block diagram form in Fig. 4. The transmitter is shown in Fig. 5. The circuit is a straightforward **pulse generator** designed around a 555 timer whose pulse repetition rate is determined by joystick potentiometer R1 and timing **capacitor** C1. Pulses from the 555 (pin 3) switch Q1 on and off, thus applying current to infrared-emitting diode LED1, Resistor R4 **limits current** through the

diode to less than 100 mA.

Figure 6 shows one of several simple receivers I tested that can detect the signal from the...full range, you may need to alter the value of C1 in the transmitter.

You can monitor the output of the receiver with a high- **impedance** voltmeter. And you can gain a better understanding of the entire transmitter-receiver system by using an oscilloscope to observe pin 3 of the transmitter...

?